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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,577	09/22/2003	Carl M. Ross	NON PROV-1	9649

7590

10/05/2005

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EXAMINER

SAYOC, EMMANUEL

ART UNIT PAPER NUMBER

3746

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/667,577	ROSS, CARL M.	
	Examiner	Art Unit	
	Emmanuel Sayoc	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The informal drawings are of sufficient quality for examination purposes only. Accordingly, new formal drawings are required at the time the application is allowed. Failure to timely submit new formal drawings at the time of allowance will result in **ABANDONMENT** of the application.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the power board/power device 25 (page 7 paragraph 42) as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 1-8, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 line 9, the phrase "converter of the electric" is indefinite. What electric component is referred to in this phrase? It is assumed that the electric motor of the pump is referred to here.

In claim 4 line 1, and claim 12 line 1, the phrase "bypassing the sensor" is ambiguous in that it is unclear whether both sensors, the first sensor, or the second sensor of the parent claim are bypassed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izaguirre (U.S. 5,305,779) and in view of Leighton et al. (U.S. 6,676,382 B2).

Izaguirre, in Figures 1a-2b, teach a pumping system and an associated method for sensing and moving liquid comprising a liquid sensor (28, 29, 86, and also 74, 78, 80, 82) for sensing liquid and being constructed and arranged to provide an electrical signal when exposed to the liquid. The device also includes a control unit (Figure 2b) comprising a relay (104-1, 106, 106-1, 112), whereby the relay (104-1, 106, 106-1, 112) becomes activated by the electrical signal provided by the sensor (28, 29, 86, and also 74, 78, 80, 82). The system includes a pump for moving liquid that has been sensed by the sensor (28, 29, 86, and also 74, 78, 80, 82) from a First location (in tank 66) to a second location (outside the tank 66). When the relay (start relay 104-1) becomes activated (by sensor 29, 80), the pump (68) is powered on.

The Izaguirre device differs from the claimed invention in that there is no explicit teaching of a power converter for converting an input AC voltage to a DC voltage where the DC voltage is output from the power converter of the electric motor of the pump (68).

AC lines (108, 110) indicate that the power supply of the system is an AC voltage source. It was well known in the art that AC power sources are more economical to use and transport than DC voltage sources. However DC motors are inexpensive and versatile for pump actuation. Leighton et al. in Figure 1 teach an analogous sump pump,

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control, and monitoring system. Figure 33 shows a 120 volt AC power source for the pump, which is transformed (i.e. power converter/inverter) to 40 volts DC for direct consumption of the pump motor (column 9 lines 65 - column 10 line 8). This power converter device allows the use of readily available and efficient AC power coupled with an inexpensive and versatile DC motor. Furthermore, the Leighton et al. device includes a battery backup power supply in the event AC power is unavailable. Power sources are adjusted with automatic switches (column 1 line 64 to column 2 line 9, and column 10 line 1 to column 11 line 11). Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the Izaguirre device by, incorporating the AC power converter, as taught by Leighton et al., in order to advantageously allow the use of readily available and efficient AC power coupled with an inexpensive and versatile DC motor. Furthermore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the Izaguirre device by, incorporating the AC power supply with the DC power supply backup and switch, as taught by Leighton et al., in order to advantageously prevent pumping disruption in the event of AC power loss.

A second liquid sensor (82, 106-1, 106-2, see column 8 line 12-17) activates a second relay (112) of the control unit (Figure 2b), which supplies DC voltage to a visual and audible notification means (horn 116, light 114) for indicating the presence of an initial collection of liquid.

The system includes a switch (94) for bypassing the sensor so that the pump may, in a manual mode, obtain power duty from the control (Figure 2b) unit without the need to sense liquid in an automatic mode (column 7 line 65 to column 8 line 2).

With respect to the exact voltage conversion from 120 volts AC to 12 volts DC, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to further show the state of the art with respect to pumping systems.


U.S. Pat. 2002/0134132 A1 to Colman et al., 6,499,961 to Wyatt et al., 2002/0090303 to Scott, and 4,265,262 to Hotine – teach analogous pumping systems to that of the claimed invention with relays and liquid sensors.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Sayoc whose telephone number is (571) 272 4832. The examiner can normally be reached on M-F 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on (571) 272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Emmanuel Sayoc
Examiner
Art Unit 3746

ECS